Bottle Music

Station materials:

- 20 glass bottles (2 sets of 6) (2 sets of 4)
- Water pitchers (2)
- Butter knives (4-6)
- Funnels (2)
- Measuring cups (2)

Station set-up:

- Fill the pitchers with water
- Display the bottles in sets of 4 along with a measuring cup, funnel and several forks (This creates two “learning stations”
- Set up one set of 6 bottles for the “song” piece (fill with water to the markings on the bottles

5 1/2 "	**4 "**	**3 1/4 "**	**3 "**	**2 1/4 "**	**2 "**
1	**2**	**3**	**4**	**5**	**6**

Guiding the learning:

- Guide the students to add water to the bottles at different levels (or different measured amounts)
- Guide the students to tap on the sides of the bottles with the forks and observe any difference in the sound created
- Ask the students what they think causes the different sounds
- Explain that what they are hearing are differences in sound pitch. Pitch is related to the amount of water the sound has to travel through
- Ask the students about the relationship between amount of water and pitch of sound (more water, higher pitch)
- Ask students (or demonstrate) to blow across the top of two bottles with different amounts of water. Is there a difference between blowing and tapping? (it will be the opposite effect, the more water the higher pitch)
- Why? Because when you are tapping the bottle you are vibrating the column of water, when you blow into the bottle you are vibrating the column of air)
- Direct student's attention to the six marked bottles. Show them the "music" and ask them to try to play a song

Science Talking Points

- Sound is a form of energy that travels in waves and is created by vibrations.
- The shorter the wave, the greater the number of vibrations (frequency), the higher the pitch.
- The longer the wave, the fewer the number of vibrations (frequency), the lower the pitch.
- By tapping on the bottles, a vibration is made through the water, which creates the sound.
- By blowing across the top of the bottle, a vibration is made through the air, which creates a sound with a pitch opposite that of the water when the bottle is tapped.

Bottle Music

Try to play these songs:

Mary Had a Little Lamb

3 2 1 2 3 3 3 2 2 2 3 5 5
3 2 1 2 3 3 3 3 2 2 3 2 1

Jingle Bells

3 3 3 3 3 3 3 5 1 2 3
4 4 4 4 4 3 3 3 3 5 5 4 2 1

Twinkle, Twinkle Little Star

1 1 5 5 6 6 5 4 4 3 3 2 2 1
5 5 4 4 3 3 2 5 5 4 4 3 3 2
1 1 5 5 6 6 5 4 4 3 3 2 2 1

This Old Man

5 3 5 5 3 5 6 5 4 3 2 3 4
3 4 5 1 1 1 1 1 2 3 4 5
5 2 2 4 3 2 1